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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,649	07/19/2005	Shoji Ito	Q89230	1668

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WASHINGTON, DC 20037

EXAMINER

PHAN, THIEM D

ART UNIT	PAPER NUMBER
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3729

MAIL DATE	DELIVERY MODE
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10/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/542,649

Applicant(s)

ITO ET AL.

Examiner

Tim Phan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 1-14, 20-26 and 28-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-19 and 27 is/are rejected.
- 7) ☒ Claim(s) 15-19 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/19/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicants' election without traverse of Species I, Claims 15-19 and 27, filed on 8/20/07 is acknowledged.

The Restriction mailed on 7/27/07 has been carefully reviewed and is held to be proper.

Accordingly, Claims 1-14, 20-26 and 28-45 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected groups, there being no allowable generic or linking claim to the whole claimed invention.

The Restriction filed on 7/27/07 is hereby made Final.

Applicants are required to cancel these nonelected claims (1-14, 20-26 and 28-45) or take other appropriate action. An Office Action on the merits of Claims 15-19 and 27 now follows.

Specification

2. The disclosure is objected to because of the following informalities:

- On page 1, before "**TECHNICAL FIELD**", insert:

"CROSS-REFERENCE TO RELATED APPLICATIONS

This application is the U.S. National Phase under 35 U.S.C. 371 of International Application PCT/JP03/16377, filed 12/19/03, which claims priority to JAPAN Application Nos. 2003-11635, filed 01/20/03, 2003-294994, filed 08/19/03, 2003-309254, filed 09/01/03 and 2003-342907, filed 10/01/03."

Title

3. The following title is suggested: "Process for Producing Multilayer Printed Wiring Board".

Drawings

4. Figures 1A-2B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicants will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 15-19 and 27 are objected to because of the following informalities: the claimed language "at least one of a surface and a rear surface of a motherboard" is awkward and should be "at least one of a front surface and a rear surface of a motherboard". Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claims 15-18 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto et al (US 6,281,446).

With regard to claim 15, Sakamoto et al teach a method of manufacturing a multi-layered circuit board, comprising:

- laminating a base material (Fig. 7A, 16) having a wiring circuit (Fig. 7A, 21) which is formed into a predetermined outer shape with one front surface of a motherboard (Fig. 7B, 11).

With regard to claim 16, Sakamoto et al teach a method of manufacturing a multi-layered circuit board, comprising:

- forming a wiring circuit (Figs. 4A-5B, 13a & bottom end of 11) on at least one of a front surface and a rear surface of the motherboard (Fig. 5B, 11);
- making a via hole (Fig. 5B, 15); and
- laminating a base material (Figs. 6A-7B, 16) having a wiring circuit (Fig. 6B, 18) which is formed into a predetermined outer shape.

With regard to claim 17, Sakamoto et al teach that an outer shape of the base material (Fig. 7A, 16) having a wiring circuit (Fig. 7A, 18) is smaller than the outer shape of the motherboard (Fig. 7A, 11).

With regard to claim 18, Sakamoto et al teach the forming of a cover layer (Fig. 4A, 39) having an opening (Figs. 4A-7B, 15a) for positioning the base material (Fig. 7A, 16) having a wiring circuit (Fig. 7A, 18) prior to the operation of laminating (Figs. 7A & 7B, 16 & 11) the base material having a wiring circuit with the motherboard.

With regard to claim 27, Sakamoto et al teach the laminating of a base material with single-sided wiring circuit (Fig. 12A, 19b), which is formed into a predetermined outer shape (Fig. 13A, 33) to one frontal surface of the motherboard (Fig. 13A, 31).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al.

With regard to claim 19, Sakamoto et al teach a method of manufacturing a multi-layered circuit board including the laminating of the base material (Fig. 1, 16) having a wiring circuit (Fig. 1, 18) with the motherboard (Fig. 1, 11), the filling up of the cavity (Fig. 1, 15; col. 5, lines 12-16) with resin, which reads on applicants' claimed invention; except for forming a cover layer for coating the motherboard and the base material.

It would be obvious to one of ordinary skill in the art at the time the invention was made to form a cover layer for coating the motherboard and the base material, since it is known in the art that the process is to make a printed circuit board safe from the environment (Col. 4, line 4) and that a printed circuit board must always be covered with a silkscreen layer at the two front and rear exposed surfaces, except at the contact pads for soldering or connector insertion, to protect against flux during reflow and contaminants from environment.

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Phan whose telephone number is 571-272-4568. The examiner can normally be reached on M & Tu, 6AM - 2PM, and W & Th, 9AM – 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Tim Phan", written in a cursive style.

Tim Phan
Examiner
Art Unit 3729

tp
October 11, 2007